

WHAT IS CLAIMED IS:

1. An electrode for a fuel cell comprising: a catalyst layer; and a gas diffusion layer stacked on the catalyst layer,

5 wherein an arithmetic average roughness Ra of the surface of the gas diffusion layer on a side in contact with the catalyst layer is 15  $\mu\text{m}$  or less.

10 2. The electrode for the fuel cell according to claim 1, wherein the arithmetic average roughness Ra of the surface of the gas diffusion layer on the side in contact with the catalyst layer is in a range of 0.012 to 5  $\mu\text{m}$ .

15 3. The electrode for the fuel cell according to claim 1 or 2, wherein the gas diffusion layer includes a structure in which a carbon powder is charged in a porous carbon substrate.

20 4. A fuel cell comprising:  
a cell including a proton exchange membrane, an anode in which a catalyst layer is stacked on a gas diffusion layer and whose catalyst layer is disposed on one surface of the proton exchange membrane, and a cathode in which the catalyst layer is stacked on the gas diffusion layer and whose catalyst layer is disposed on the other surface of the proton exchange membrane;

25 a first plate which is disposed opposite to the gas

diffusion layer of the anode and via which a fuel gas supplied to the anode is circulated; and

a second plate which is disposed opposite to the gas diffusion layer of the cathode and via which an oxidant gas supplied to the cathode is circulated and which holds the cell together with the first plate,

wherein the electrode for the fuel cell according to any one of claims 1 to 3 is used in at least one of the anode and the cathode.